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REMARKS

The Office action of August 25, 2004, has been carefully considered.

Claims 5 and 6 have been withdrawn from consideration, and these claims have now been cancelled.

Claims 1 through 3 have been rejected under 35 USC 103(a) over Roberts et al in view of Kurokawa et al.

Roberts et al has been cited to show an LED device mounted on a substrate and encapsulated by a transparent epoxy including phosphor particles. Kurokawa et al has been cited to show that this epoxy is a resin.

At column 24, lines 33-44, Roberts et al discloses that dyes or pigments may be blended or dispersed within clear portions of the encapsulant to alter the exterior appearance of the device or to tailor or augment the spectrum of the emitted radiation. Fluorescent dyes, pigments or phosphors may also be used within the encapsulant or more particularly in a stress relieving gel to absorb energy emitted by the optical radiation emitter and re-emit it at lower wavelengths.

Roberts et al, however, does not disclose the essence of the invention as now recited in Claim 1 as amended. Claim 1 recites a chromaticity corrected LED device comprising an LED mounted on a substrate with a transparent resin sealing the LED, the transparent resin including phosphor particles distributed therein for changing chromaticity of light emitted from the LED to a desired chromaticity based upon an *expected* chromaticity of light emitted from the LED. At least a portion of the sealing resin is dyed with a dye correcting the chromaticity of the light emitted from the LED which is based upon an *actual* chromaticity of the light emitted.

Thus, as is disclosed on page 4 of the present specification, it is known that chromaticity of light emitted

from an LED device varies according to dispersion of the wavelength and intensity of the light emitted from the LED itself, and according to the dispersion of the distribution of particles in the resin which encapsulates the LED. While it is well known to incorporate phosphor particles in the resin to correct the emitted light, this correction does not take into account the variation in LEDs themselves, and in the actual dispersion of the phosphor particles in the resin.

According to the claimed invention, a dye is added to at least a portion of the sealing resin in order to correct the chromaticity on the light emitted by the LED, and based upon the actual chromaticity as emitted, and not simply as predicted. Because this dye can be added in an outer layer of the resin, it is possible to actually measure the light emitted by the encapsulated LED, and incorporate the appropriate dye to correct the chromaticity of the light as emitted.

This is quite different from what is disclosed in Roberts et al, in which the dye is added in order to alter the appearance of the device or to augment the spectrum of radiation emitted, and in which fluorescent dyes, pigments or phosphors may be used within the encapsulant, specifically to absorb energy emitted by the optical radiation emitter and re-emit at lower wavelengths. There is no disclosure or suggestion of using the dye as the final correction, based upon a measurement of the actual radiation emitted by the incorporated phosphors.

Withdrawal of this rejection is accordingly requested.

Claim 4 has been rejected under 35 USC 103 over Roberts et al and Kurokawa et al and further in view of Reeh et al. According to Reeh et al, a luminescence conversion layer 4 is

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applied to a transparent encapsulant 15 and covers the entire surface of the encapsulant.

However, Reeh et al does not cure the defects of Roberts et al and Kurokawa et al, in that it does not disclose or suggest utilizing a dye to correct chromaticity as actually measured as a product of the specific LED and the phosphors in the encapsulant.

Withdrawal of this rejection is requested.

In view of the foregoing amendments and remarks, Applicant submits that the present application is now in condition for allowance. An early allowance of the application with amended claims is earnestly solicited.

Respectfully submitted,

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